CLAIMS

What is claimed is:

1. A method for operating a virtual machine within a data processing system, the method comprising the computer-implemented steps of:

running a plurality of virtual machines on one or more devices within the data processing system, wherein each virtual machine in the plurality of virtual machines incorporates functionality for interoperating with other virtual machines in a virtual machine cluster; and

associating the plurality of virtual machines in a virtual machine cluster, wherein each virtual machine in the virtual machine cluster acts as a node within the virtual machine cluster.

2. The method of claim 1 further comprising:

sharing information about the plurality of virtual machines within the virtual machine cluster such that a virtual machine may be added to the virtual machine cluster or such that a virtual machine may be removed from the virtual machine cluster as the plurality of virtual machines continues to run.

3. The method of claim 1 further comprising:

sharing load values representing computer resource utilization among the virtual machines in the virtual machine cluster; and

performing a load-balancing operation across the virtual machine cluster.

4. The method of claim 3 further comprising:

determining that a CPU load utilization on a first virtual machine exceeds a threshold value; and

moving a thread from the first virtual machine to a second virtual machine during a load-balancing operation.

5. The method of claim 3 further comprising:

determining that a memory load utilization on a first virtual machine exceeds a threshold value; and

moving a set of one or more objects from the first virtual machine to a second virtual machine during a load-balancing operation.

6. The method of claim 1 further comprising:

moving a thread from a first virtual machine in the virtual machine cluster to a second virtual machine in the virtual machine cluster.

7. The method of claim 1 further comprising:

moving a set of one or more objects from a first virtual machine in the virtual machine cluster to a second virtual machine in the virtual machine cluster.

8. The method of claim 1 further comprising:

running a multi-threaded application within the virtual machine cluster; and

dispatching threads of the multi-threaded application on different virtual machines such that execution of the multi-threaded application spans multiple virtual machines.

9. A computer program product on a computer readable medium for use within a data processing system for operating a virtual machine, the computer program product comprising:

means for running one of a plurality of virtual machines on one or more devices within the data processing system, wherein each virtual machine in the plurality of virtual machines incorporates functionality for interoperating with other virtual machines in a virtual machine cluster; and

means for associating a virtual machine with the plurality of virtual machines in a virtual machine cluster, wherein each virtual machine in the virtual machine cluster acts as a node within the virtual machine cluster.

10. The computer program product of claim 9 further comprising:

means for sharing information about the plurality of virtual machines within the virtual machine cluster such that a virtual machine may be added to the virtual machine cluster or such that a virtual machine may be removed from the virtual machine cluster as the plurality of virtual machines continues to run.

11. The computer program product of claim 9 further comprising:

means for sharing load values representing computer resource utilization among the virtual machines in the virtual machine cluster; and

means for performing a load-balancing operation across the virtual machine cluster.

12. The computer program product of claim 11 further comprising:

means for determining that a CPU load utilization on a first virtual machine exceeds a threshold value; and

means for moving a thread from the first virtual machine to a second virtual machine during a load-balancing operation.

13. The computer program product of claim 11 further comprising:

means for determining that a memory load utilization on a first virtual machine exceeds a threshold value; and

means for moving a set of one or more objects from the first virtual machine to a second virtual machine during a load-balancing operation.

14. The computer program product of claim 9 further comprising:

means for moving a thread from a first virtual machine in the virtual machine cluster to a second virtual machine in the virtual machine cluster.

15. The computer program product of claim 9 further comprising:

means for moving a set of one or more objects from a first virtual machine in the virtual machine cluster to a second virtual machine in the virtual machine cluster.

16. The computer program product of claim 9 further comprising:

means for running a multi-threaded application within the virtual machine cluster; and

means for dispatching threads of the multi-threaded application on different virtual machines such that execution of the multi-threaded application spans multiple virtual machines.

17. An apparatus within a data processing system for operating a virtual machine, the apparatus comprising:

means for running one of a plurality of virtual machines on one or more devices within the data processing system, wherein each virtual machine in the plurality of virtual machines incorporates functionality for interoperating with other virtual machines in a virtual machine cluster; and

means for associating a virtual machine with the plurality of virtual machines in a virtual machine cluster, wherein each virtual machine in the virtual machine cluster acts as a node within the virtual machine cluster.

18. The apparatus of claim 17 further comprising:

means for sharing information about the plurality of virtual machines within the virtual machine cluster such that a virtual machine may be added to the virtual machine cluster or such that a virtual machine may be removed from the virtual machine cluster as the plurality of virtual machines continues to run.

19. The apparatus of claim 17 further comprising:

means for sharing load values representing computer resource utilization among the virtual machines in the virtual machine cluster; and

means for performing a load-balancing operation across the virtual machine cluster.

20. The apparatus of claim 19 further comprising:

means for determining that a CPU load utilization on a first virtual machine exceeds a threshold value; and

means for moving a thread from the first virtual machine to a second virtual machine during a load-balancing operation.

21. The apparatus of claim 19 further comprising:

means for determining that a memory load utilization on a first virtual machine exceeds a threshold value; and

means for moving a set of one or more objects from the first virtual machine to a second virtual machine during a load-balancing operation.

22. The apparatus of claim 17 further comprising:

means for moving a thread from a first virtual machine in the virtual machine cluster to a second virtual machine in the virtual machine cluster.

23. The apparatus of claim 17 further comprising:

means for moving a set of one or more objects from a first virtual machine in the virtual machine cluster to a second virtual machine in the virtual machine cluster.

24. The apparatus of claim 17 further comprising:

means for running a multi-threaded application within the virtual machine cluster; and

means for dispatching threads of the multi-threaded application on different virtual machines such that execution of the multi-threaded application spans multiple virtual machines.